REMARKS/ARGUMENTS

Claims 37-55 are pending in this application. Claims 37-55 are rejected in the Office action of August 8, 2005. Claim 37 is hereby amended. Support for the amendment to claim 37 may be found in original claim 38. Claim 38 is hereby canceled without prejudice or disclaimer.

In view of the amendments and remarks made herein, Applicants respectfully request reconsideration of claims 37-55.

Rejections under 35 U.S.C. § 102(b)

Claims 37, 38, 40 and 41 are rejected under 35 U.S.C. § 102(b) as anticipated by Denzinger *et al.* (U.S. Pat. No. 5,175,361, hereinafter referred to as "Denzinger"). Denzinger does not disclose a polymer for use in dental restoratives wherein the polymer has a backbone structure consisting essentially of a first monomer unit comprising acrylic acid (AA); a second monomer unit comprising maleic acid (MA); and a third monomer unit comprising a free-radical polymerizable vinyl amide selected from the group consisting of methacrylamide, dimethylacrylamide, isopropylacrylamide, N-vinyl-2-pyrrolidone, N-vinylcarbazole, N-vinylsuccinimide, N-vinylcaprolactam, and N-vinylimidazole; wherein the polymer optionally has a free-radical or visible light curable (VLC) moiety pendant to the polymer backbone. Since Denzinger does not recite all of the limitations of claim 37 as amended, claim 37, and dependent claims 38, 40, and 41 are not anticipated by Denzinger. Applicants respectfully request withdrawal of this rejection.

Rejections under 35 U.S.C. § 103(a)

Claims 37-41, 43 and 48-54 are rejected under 35 U.S.C. § 103(a) as obvious over Xie *et al.* (J.M.S.-Pure Appl. Chem., A35 (4), pp. 547-561 (1998), hereinafter referred to as "Xie") or Culbertson *et al.* (ACS Symposium Series, 755, 2000, pp. 222-232, hereinafter referred to as "Culbertson (Symposium Series)") in view of Culbertson *et al.* (US Pat. No. 5,639,142, hereinafter referred to as "Culbertson"). The combination of Xie I or Culbertson (Symposium Series) in view of Culbertson does not teach or suggest the claimed terpolymer having a backbone structure consisting essentially of acrylic acid (AA); maleic acid (MA); and free-

radical polymerizable vinyl amide selected from the group consisting of methacrylamide, dimethylacrylamide, isopropylacrylamide, N-vinyl-2-pyrrolidone, N-vinylcarbazole, N-vinylsuccinimide, N-vinylcaprolactam, and N-vinylimidazole. The combination of Xie or Culbertson (Symposium Series) in view of Culbertson does not teach or suggest a dental restorative comprising a polymer wherein the polymer has a backbone structure comprising acrylic acid (AA); maleic acid (MA); and a free-radical polymerizable vinyl amide; and an inorganic glass powder. The combination of Xie or Culbertson (Symposium Series) in view of Culbertson does not teach or suggest a method for preparing a polymer to be used in dental restoratives comprising polymerizing monomers comprising acrylic acid (AA); maleic acid (MA); anda third monomer unit comprising a free-radical polymerizable vinyl amide.

Xie and Culbertson (Symposium Series) teach terpolymers of itaconic acid, acrylic acid and N-vinyl pyrrolidone. Neither teaches or suggests the use of maleic acid in an acrylic acid and N-vinyl pyrrolidone terpolymer, but rather, both focus on the use of itaconic acid. Culbertson mentions the use of maleic acid in dental restoratives, not in an acrylic acid, maleic acid, N-vinyl pyrrolidone terpolymers, but rather, in homopolymers and co-polymers which will have pendant amino acid groups. (See, Culbertson, column , second full paragraph). There is no teaching or suggestion within Culbertson, Culbertson (Symposium Series), or Xie, or any combination thereof, to modify the itaconic acid, acrylic acid and N-vinyl pyrrolidone terpolymers of Culbertson (Symposium Series) or Xie with maleic acid. Culbertson merely lists monomers useful in homopolymers or copolymers, which when having pendant amino acid groups, are useful in dental restoratives. Culbertson does not teach or suggest substituting maleic acid, which has a higher concentration of acid groups, and thus different properties from itaconic acid, for itaconic acid in Xie or Culbertson (Symposium Series). There simply is no reasonable expectation that maleic acid could be substituted for itaconic acid in Xie or Culbertson (Symposium Series). At best, it may be obvious to try, based merely on the listing of monomers in Culbertson. Accordingly, Applicants respectfully submit that claims 37, 39-41, 43 and 48-54 are non-obvious over Xie and/or Culbertson (Symposium Series) in view of Culbertson.

Claims 37-55 are rejected under 35 U.S.C. § 103(a) as obvious over Xie *et al.* (J.M.S.-Pure. Appl. Chem., A35(10), pp. 1631-1650 (1998), hereinafter referred to as "Xie II") in view

of Culbertson (US Pat. No. 5,639,142, "Culbertson"). The combination of Xie II in view of Culbertson does not teach or suggest the claimed terpolymer having a backbone structure consisting essentially of acrylic acid (AA); maleic acid (MA); and free-radical polymerizable vinyl amide selected from the group consisting of methacrylamide, dimethylacrylamide, isopropylacrylamide, N-vinyl-2-pyrrolidone, N-vinylcarbazole, N-vinylsuccinimide, N-vinylcaprolactam, and N-vinylimidazole. The combination of Xie II in view of Culbertson does not teach or suggest a dental restorative comprising a polymer wherein the polymer has a backbone structure comprising acrylic acid (AA); maleic acid (MA); and a free-radical polymerizable vinyl amide; and an inorganic glass powder. The combination of Xie II in view of Culbertson does not teach or suggest a method for preparing a polymer to be used in dental restoratives comprising polymerizing monomers comprising acrylic acid (AA); maleic acid (MA); and a third monomer unit comprising a free-radical polymerizable vinyl amide.

As explained above, the acrylic acid, maleic acid, N-vinyl pyrrolidone terpolymers of the present invention are different from the homopolymers and copolymers with pendant amino acid groups of Culbertson. Neither Xie II nor Culbertson provide a teaching or suggestion to use maleic acid in a acryl acid and N-vinyl pyrrolidone-containing terpolymer. Culbertson lists monomers that are useful in preparing homopolymers and copolymers having pendant amino acid groups. Xie II teaches only the use of itaconic acid and maleic acid in N-vinyl pyrrolidone-containing terpolymers. Neither provides any teaching or suggestion that maleic acid, with a higher concentration of acids than itaconic acid, may successfully be used in place of itaconic acid in a N-vinyl pyrrolidone-containing terpolymer. With no teaching or suggestion to combine these references, and no reasonable expectation of success if the references are combined, the only rationale for combining the references is that the combination would be obvious to try. Accordingly, Applicants respectfully submit that claims 37 and 38-55 are non-obvious over Xie II in view of Culbertson.

In view of the amendments and remarks made herein, Applicants respectfully submit claims 37 and 38-55 are patentable over the cited references. Reconsideration and allowance of those claims is appropriate and is respectfully requested.

Respectfully submitted,

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